Technical notes

National surveillance for tuberculosis

All 50 states, the District of Columbia, New York City, U.S. dependencies and possessions, and independent nations in free association with the U.S. report TB cases to the CDC using a standard case report form, Report of a Verified Case of Tuberculosis (RVCT).1,2 The TB case definition for public health surveillance (MMWR 1997;46[No.RR-10]:40-41) has three components: (1) laboratory-confirmed cases diagnosed by isolation of *M. tuberculosis* from a clinical specimen; (2) cases in which acid-fast bacilli (AFB) have been found in a clinical specimen, but for which a culture has not been or cannot be obtained; and (3) cases that meet all of the following clinical criteria: (a) a positive tuberculin skin test result, (b) other signs and symptoms compatible with TB, such as an abnormal, unstable (worsening or improving) chest radiograph, or clinical evidence of current disease, (c) treatment with two or more antituberculosis medications, and (d) a complete diagnostic evaluation. Cases that meet all criteria in any one of the three components are classified as verified TB cases according to the TB surveillance case definition. Cases that do not meet all of the criteria in any one of the three components (e.g., disease in anergic patients who may have a negative culture for *M. tuberculosis* but who have a clinical syndrome consistent with TB) may be reported to the TB program by the health care provider and verified as TB cases based on provider diagnosis. TB cases verified by the TB programs are reported to CDC using the software for expanded TB surveillance (SURVS-TB).

In January 1993, in conjunction with state and local health departments, CDC implemented an expanded surveillance system for TB which incorporated collection of additional data to better monitor and target groups at risk for TB disease, assess drug-susceptibility results for initial and final *M. tuberculosis* isolates from each culture positive patient, and evaluate outcome of TB cases. The RVCT form for reporting TB cases was revised to collect results for human immunodeficiency virus (HIV) testing, occupation, history of substance abuse and homelessness, and residence in correctional or long-term-care facilities at the time of diagnosis, and initial drug regimen. Drug susceptibility results for the initial *M. tuberculosis* isolate from a culture positive patient are reported on the RVCT Follow Up Report-1 form. To evaluate the outcomes of antituberculous therapy, information collected includes date and reason therapy was stopped, type of health-care provider, sputum culture conversion, use of directly observed therapy, and drug susceptibility for the final *M. tuberculosis* isolate from a culture positive patient (RVCT Follow Up Report-2). Instructions for completing the RVCT forms and definitions for all data items are included in the SURVS-TB User Manual.

Reporting of HIV infection

Table 20 shows information on HIV status for TB cases age 25-44, the age group in which 75 percent of AIDS cases occur (HIV/AIDS Surveillance Report 1996;8[No.2]:1-39). Information on HIV status for TB cases reported in 1996 is incomplete. Reasons for incomplete reporting of HIV testing results to the national surveillance system include 1) concerns about confidentiality which may limit exchange of data between TB and HIV/AIDS programs, 2) laws and regulations in selected states and

1 Included among the dependencies, possessions, and independent nations are Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, the Republic of the Marshall Islands, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, and the Republic of Palau.

2 American Samoa, Federated States of Micronesia, Northern Mariana Islands, and the Republic of the Marshall Islands did not report RVCT data in 1996.

local jurisdictions which have been interpreted to prohibit the HIV/AIDS program from sharing the HIV status of TB patients with the TB program or from reporting patients with TB and AIDS to the TB program, and 3) reluctance by health care providers to report HIV test results to the TB surveillance program staff. In addition, health care providers may not offer counseling and HIV testing to some TB patients because of lack of resources or appropriately trained staff, or due to perception that selected patients (e.g., elderly) are not at risk of HIV infection.

Data on the HIV infection status of reported TB patients in 1996 should be interpreted with caution. These data are not representative of all TB patients with HIV infection. HIV testing is performed after counseling and the patient gives informed consent. Since testing is voluntary, some TB patients may decline HIV testing. TB patients who are tested anonymously may choose not to share the results of HIV testing with their health care provider. TB patients managed in the private sector may receive confidential HIV testing but results may not be reported to the TB program in the health department. In addition, many factors may influence HIV testing of TB patients, including the extent that testing is targeted or routinely offered to specific group (e.g., 25-44 year old males, injecting drug users, homeless persons, etc.) and the availability and access to HIV testing services. These data do not provide a minimum estimate of the number of TB patients known to be HIV infected in a reporting area.

Tabulation and presentation of TB data

This report includes information received by CDC on TB cases verified and counted in 1996. Data on type of health care provider, use of directly observed therapy, and reason therapy stopped reported on the RVCT Follow Up Report-2 form (Case Completion Report) for verified cases counted in 1994 are included in this report. TB cases diagnosed in 1995 and 1996 do not have complete information on data from the RVCT Follow Up Report-2 form and are not included in this report. TB cases are tabulated by the month and year the health department verifies the patient has TB and included the patient in the official TB case count (month-year counted) unless otherwise noted. Data for U.S. dependencies and possessions and for associated independent nations are not included in the U.S. totals.

Age group tabulations are based on the patient's age at the month and year the patient was reported to the health department as a suspect TB case (month-year reported). Metropolitan areas with 500,000 or more population are included in this summary. On December 31, 1992, the Office of Management and Budget announced new Metropolitan Statistical Area (MSA) definitions, which reflect changes in the U.S. population as determined by the 1990 census. These definitions were revised most recently on July 1, 1996. The cities and counties which compose each metropolitan areas listed in Table 25 are provided in the publication "Metropolitan Areas as of June 30, 1995" (available from the National Technical Information Service, 1-703-487-4650, accession no. PB95-208880) The metropolitan areas definitions are the MSAs for all areas except the 6 New England states. For these states, the New England County Metropolitan Areas (NECMA) are used. Metropolitan areas are named for a central city in the MSA or NECMA, may include several cities and counties, and may cross state boundaries. For example, TB cases and case rates presented for the District of Columbia in Table 6 include only persons residing within the geographic boundaries of the District. TB cases and case rates for Washington, D.C. in tables 25-29 include persons residing within the several counties in the metropolitan area, including in Maryland, Virginia, and West Virginia. State or metropolitan area data tabulations are based on the patient's residence at diagnosis of TB.

Rates

Rates are calculated on an annual basis per 100,000 population. Population denominators for computing TB rates for the 50 states and the District of Columbia are based on official post census estimates from the U.S. Bureau of Census. Denominators for U.S. dependencies and possessions are linear extrapolations of official 1980 and 1990 census counts. Each annual case rate is the number of cases reported and counted during the 12-month period divided by the 1995 or 1996 population, multiplied by 100,000. The denominators for computing race-specific rates (Table 3) are based on 1996 census estimates published in U.S. Bureau of Census document PPL-57, U.S. Population Estimates by Age, Sex, Race, and Hispanic Origin: 1990 to 1996, March 1997. Race-specific rates are the number of cases reported and counted for a particular racial/ethnic group during the preceding 12-month period divided by the estimated population for that racial/ethnic group, multiplied by 100,000. The denominators for computing rates for foreign-born persons (Figure 8) are based on population estimates from the U.S. Bureau of Census document P20-494, The Foreign-born Population: 1996; Current Population Reports, March 1997.

Official tuberculosis mortality statistics for the United States are complied by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. Each year mortality rate is the number of deaths due to tuberculosis in that year divided by the estimated population for the year, multiplied by 100,000. The number of deaths for 1995 is provisional and is based on the NCHS 80-90-percent sample of 1995 deaths. The number of deaths for 1996 was not available at time of publication.